Survey Shows Freshmen Shift on Careers, Values

An annual survey of entering college freshmen shows that this year's frosh are distinctly cool to careers in scientific research. Scores on what might be called the greed and power index, however, are up and rising.

Perhaps the most striking statistics in the survey are those that indicate a continuing decline in interest in elementary and secondary school teaching. The news that only 4.7 percent of the freshmen this year aspire to teaching careers compared to 21.7 percent in 1966 is stark enough. But UCLA professor Alexander Astin, who is director of the study, observes also that since standardized tests show that "Education majors have much weaker academic skills than students majoring in most other fields, it appears that we are headed for a crisis not only in the quantity but also in the quality of persons who want to teach in our elementary and secondary schools."

Scientific research was made a career choice by 3.5 percent of freshmen in 1966 when the surveys began. This year, only 1.5 percent chose it.

In contrast, categories that have recorded remarkable rises in drawing power in recent years include engineering—from 4.7 percent in 1974 to 12 percent in 1982—and computer programmer/analyst—from 2.9 percent in 1977 to 8.8 percent in 1982.

The survey is conducted by UCLA and the American Council on Education. In addition to collecting a variety of biographical, demographic, and financial data from the sample of 188,692 questionnaires from 350 institutions, the survey also assesses student academic interests, motivations, and attitudes on political and social issues.

Astin sees the waning enthusiasm for careers in scientific research as fitting a pattern in a group of occupations which are "all losing people." All are low paying, require graduate study, and provide "human services." The group includes nursing, social work, and the clergy as well as education and scientific research.

To a question on "objectives to be considered essential or very important," the top scoring option at 73.1 percent was "to be very well off financially." Similarly on the rise in recent years have been desires for personal authority and recognition. Sliding downward are scores on attitudes reflective of the altruism in favor in the 1960's.

Astin notes that the decline in "altruism and humanism" is not as great as the rise in the desire for money and power. The reason? The survey shows that women in recent years have "adopted a lot of stereotypic attitudes" associated with men. Women were formerly less concerned with money and influence. The gap has narrowed so the greed and power quotient is up.—**JOHN WALSH**

USDA Seeks More Basic Biological Research

In its plans for research at the Department of Agriculture (USDA) this year, the Administration has shown a fresh determination to shift the emphasis away from traditional programs and onto new basic research projects. Many outside reviews have recommended such a change, including most recently the Winrock Conference report, sponsored by the Rockefeller Foundation and the White House Office of Science and Technology Policy (*Science*, 24 September, p. 1227). In the 1984 budget, new funds are to be channeled into competitive grants for genetic engineering studies, while less will be sought for "special grants," which are controlled by the traditional agriculture research network.

Total spending on USDA research in the 1984 budget drops from $709 to $706 million, not a severe loss, but enough to meet Secretary John Block's dictum that all major divisions of USDA have to sacrifice this year. The largest reduction, $17.9 million, is made in the special grants category. Part of this includes a $5.7-million item that USDA has been trying to eliminate for several years running, known as Section 1433 funding for animal disease research. It is earmarked exclusively for colleges of veterinary medicine and experiment stations. Because the money must be parceled out to so many eligible schools, USDA argues, the grants are too small to do much good. Although USDA has tried to eliminate the program before, the funds have been restored at the insistence of Senator John Melcher (D–Mont.), a former veterinarian who takes up the cudgels for his old profession. It may happen again this year.

The USDA hopes to counter this pressure by pointing out that the budget has new funding for animal genetic research in the competitive grants area—$4.5 million worth. In previous years, competitive grants have been awarded only for nutrition and plant research, so this budget marks a new departure. Unlike other categories of research, these projects are proposed by the scientists who want to do the research, and are funded on the basis of merit, as judged by committees of peers.

The USDA also plans to increase funding for the Agriculture Research Service, the in-house program, by $10 million. Most of this, $6.9 million, will go to meet pay increases for federal employees. The remainder is for basic research, including animal genetic engineering.

No change is planned for the land-grant cooperative program, which remains at $184 million. Thus, formula grants to state colleges will be hurt by inflation and reduced state appropriations but not by federal miserliness. According to one USDA budget official, the state schools have already made known their dissatisfaction through congressional staff. More lobbying is anticipated.

—**ELIOT MARSHALL**

Congress Raises Ante on Science Education

Inclusion in the President's budget of a $75-million initiative to bolster science and mathematics instruction seems to settle the argument over whether the federal government should play a direct role in combating the so-called crisis in science and math education in the schools. What remains very much in dispute, however, is the proper level of funding.

The main item in the Administration proposal is a $50-million scholarship program for prospective science and math teachers to be administered by

the Department of Education. The National Science Foundation (NSF) would also get some $20 million for a new program to retrain science and mathematics teachers in secondary schools (*Science*, 11 February, p. 748). Congress already has similar legislation in the works calling for funding at a much higher level. And a coalition of higher education organizations is pushing a proposal with an annual price tag of well over a half-billion dollars.

At the moment, the legislation described by one education lobbyist as "the fastest moving train in town," is H.R. 30 sponsored by Representative Carl D. Perkins (D–Ky.), chairman of the House Education and Labor Committee. Under this bill, a total of $300 million a year would be provided for support of programs ranging from research and fellowships to teacher training and purchase of instructional equipment. Some $250 million would be directed to the schools and $50 million used in programs in colleges and universities.

Another bill regarded as having legislative momentum is H.R. 582, titled the National Engineering and Science Personnel Act, introduced by Representative Don Fuqua (D–Fla.), chairman of the House Science and Technology Committee. The Fuqua bill authorizes $100 million a year for 5 years to help institutions of higher education undertake programs that would help increase the numbers of qualified graduates in science and engineering. Federal support would be given in the form of matching grants from a fund administered by NSF. The bill is unusually flexible on the kinds of activities that could be funded and puts heavy emphasis on cost sharing with the private sector.

Outside Congress, the program with the best organized backing appears to be one put forward by a coalition of 19 national higher education organizations spearheaded by the American Council on Education. In a package of programs costing a total $575 million a year, the main items would be $200 million for teacher training, $100 million for graduate fellowships, and $200 for instructional equipment.

So far, representatives of elementary and secondary school interests have failed to unite behind a particular proposal on science education. The major groups—state education officials, local school boards, teachers unions—all agree that federal aid is necessary, but have deep-running differences about how it should be administered.

In the past, the education lobby has been most successful in Washington when it managed to construct an across-the-board coalition backing an agreed proposal. To be effective in a fiscal climate as forbidding as the present one, education advocates will have to do more to subordinate individual organization instincts to a consensus common interest.

—JOHN WALSH

NSTA Nasty to NSB

An old grievance within the alliance promoting federal support of science education surfaced recently when the president of the National Science Teachers Association (NSTA) blasted the National Science Board (NSB), the policy-making body of NSF, for its record on science education. Robert Yager, a professor of education at the University of Iowa, blamed the board for not opposing the Reagan Administration's earlier moves to dismantle NSF's science education program. He pointed to the lack of "representation of the science education community on the board" and said the NSTA and other science teaching organizations will make a strong effort to see that the statute governing NSB membership is changed to allow such representation. NSB members are now required to be "eminent in the fields of basic medical, or social sciences, engineering, agriculture, education or research management or public affairs."

—JOHN WALSH

Space Program Gets New Congressional Masters

The new congressional committee lineup features two relative novices in key positions with authority over science and technology programs. Senator Slade Gorton (R–Wash.) has gained the chairmanship of the Senate Commerce Committee's subcommittee on science, technology and space, and Representative Harold Volkmer (D–Mo.) has been named chairman of the space science and applications subcommittee of the House Science and Technology Committee.

Gorton succeeds Harrison Schmitt (R–N.M.), who lost a bid for reelection last year. A moderate Republican who defeated former appropriations committee chairman Warren Magnuson in 1980, Gorton has an obvious interest in aerospace matters, since Boeing is a mainstay of Washington's economy. Volkmer, a fourth-term congressman who has not previously served on the space subcommittee, succeeds Representative Ronnie Flippo (D–Ala.), who has been elevated to the House Ways and Means Committee.

In the Senate Committee on Labor and Human Resources, which has jurisdiction over the National Institutes of Health, a significant change is that the subcommittee on investigations and general oversight has been scrapped. In the last Congress, it was chaired by Senator Paula Hawkins (R–Fla.), who used it to investigate criticisms of the National Cancer Institute. Hawkins remains on the full committee, however.—COLIN NORMAN

NIA Names Director

T. Franklin Williams of the University of Rochester School of Medicine and Dentistry has been appointed director of the National Institute on Aging, a post that has been vacant since September 1982. Williams is the co-director and founder of the Center on Aging at the University of Rochester Medical Center. His clinical research in geriatric medicine has focused on the care of elderly patients, long-term care and chronic illness, and health services for older people.

One of Williams' top priorities as director of the aging institute will be to train more physicians to teach geriatrics and to do research on aging. He cites a Rand Corporation study estimating that the United States has fewer than one-tenth the number of trained geriatric physicians needed by its academic institutions. He also plans to emphasize basic research on the dementias and related neurological disorders as well as on the aging process itself.—GINA KOLATA